

UIC- I - __11__

WDW-2

WASTE DISPOSAL

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, March 30, 2017 10:29 AM
To: 'Krakow, Matt'
Cc: Schmaltz, Randy; Robinson, Kelly; aguamosghiggins@hotmail.com; Roberts, Dale; Griswold, Jim, EMNRD
Subject: RE: Treated Waste Water Disposal

Matt:

Good morning. Western appears to be following the procedure to dispose at an OCD Permitted Facility.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us

“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)

From: Krakow, Matt [mailto:Matt.Krakow@wnr.com]
Sent: Thursday, March 30, 2017 7:47 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Schmaltz, Randy <Randy.Schmaltz@wnr.com>; Robinson, Kelly <Kelly.Robinson@wnr.com>; aguamosghiggins@hotmail.com; Roberts, Dale <Dale.Roberts@wnr.com>
Subject: Treated Waste Water Disposal

Hi Carl,

Western Refining is making notification to NMOCD of plans to dispose of treated non-hazardous waste water from Bloomfield Terminal at the Agua Moss Class I injection well. Western is in the process of submitting a C-138 and analytical of the waste for acceptance at Agua Moss, LLC in Aztec, NM. Analytical from the waste water is attached. If you have any questions please let us know.

Matthew Krakow Environmental Coordinator
Western Refining | 111 CR 4990 Bloomfield, NM 87413
matt.krakow@wnr.com | 505-632-4169 (o) | 505-632-4021(f)



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2016

Matt Krakow

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: WDW #2

OrderNo.: 1610169

Dear Matt Krakow:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/5/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610169

Date Reported: 10/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Evaporation Pond

Project: WDW #2

Collection Date: 10/4/2016 2:05:00 PM

Lab ID: 1610169-001

Matrix: AQUEOUS

Received Date: 10/5/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: pmf
Mercury	0.00036	0.00020		mg/L	1	10/7/2016 11:43:09 AM	27929
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	0.027	0.020		mg/L	1	10/7/2016 3:41:56 PM	27930
Barium	4.0	0.20		mg/L	10	10/7/2016 3:48:07 PM	27930
Cadmium	ND	0.0020		mg/L	1	10/7/2016 3:41:56 PM	27930
Chromium	ND	0.0060		mg/L	1	10/7/2016 3:41:56 PM	27930
Lead	ND	0.0050		mg/L	1	10/7/2016 3:41:56 PM	27930
Selenium	ND	0.050		mg/L	1	10/7/2016 3:41:56 PM	27930
Silver	ND	0.0050		mg/L	1	10/7/2016 3:41:56 PM	27930
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Acenaphthylene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Aniline	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Anthracene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Azobenzene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Benz(a)anthracene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Benzo(a)pyrene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Benzo(b)fluoranthene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Benzo(g,h,i)perylene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Benzo(k)fluoranthene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Benzoic acid	ND	40	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Benzyl alcohol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Bis(2-chloroethoxy)methane	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Bis(2-chloroethyl)ether	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Bis(2-chloroisopropyl)ether	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Bis(2-ethylhexyl)phthalate	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
4-Bromophenyl phenyl ether	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Butyl benzyl phthalate	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Carbazole	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
4-Chloro-3-methylphenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
4-Chloroaniline	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2-Chloronaphthalene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2-Chlorophenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
4-Chlorophenyl phenyl ether	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Chrysene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Di-n-butyl phthalate	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Di-n-octyl phthalate	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Dibenz(a,h)anthracene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1610169

Date Reported: 10/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Evaporation Pond

Project: WDW #2

Collection Date: 10/4/2016 2:05:00 PM

Lab ID: 1610169-001

Matrix: AQUEOUS

Received Date: 10/5/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Dibenzofuran	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
1,2-Dichlorobenzene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
1,3-Dichlorobenzene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
1,4-Dichlorobenzene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
3,3'-Dichlorobenzidine	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Diethyl phthalate	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Dimethyl phthalate	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2,4-Dichlorophenol	ND	40	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2,4-Dimethylphenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
4,6-Dinitro-2-methylphenol	ND	40	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2,4-Dinitrophenol	ND	40	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2,4-Dinitrotoluene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2,6-Dinitrotoluene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Fluoranthene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Fluorene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Hexachlorobenzene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Hexachlorobutadiene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Hexachlorocyclopentadiene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Hexachloroethane	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Indeno(1,2,3-cd)pyrene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Isophorone	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
1-Methylnaphthalene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2-Methylnaphthalene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2-Methylphenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
3+4-Methylphenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
N-Nitrosodi-n-propylamine	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
N-Nitrosodimethylamine	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
N-Nitrosodiphenylamine	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Naphthalene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2-Nitroaniline	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
3-Nitroaniline	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
4-Nitroaniline	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Nitrobenzene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2-Nitrophenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
4-Nitrophenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Pentachlorophenol	ND	40	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Phenanthrene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Phenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Pyrene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1610169

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CLIENT: Western Refining Southwest, Inc.

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Project: WDW #2

Collection Date: 10/4/2016 2:05:00 PM

Lab ID: 1610169-001

Matrix: AQUEOUS

Received Date: 10/5/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Pyridine	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
1,2,4-Trichlorobenzene	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2,4,5-Trichlorophenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
2,4,6-Trichlorophenol	ND	20	D	µg/L	1	10/5/2016 6:47:47 PM	27882
Surr: 2-Fluorophenol	44.7	15-123	D	%Rec	1	10/5/2016 6:47:47 PM	27882
Surr: Phenol-d5	33.2	15-124	D	%Rec	1	10/5/2016 6:47:47 PM	27882
Surr: 2,4,6-Tribromophenol	52.0	18.4-134	D	%Rec	1	10/5/2016 6:47:47 PM	27882
Surr: Nitrobenzene-d5	56.9	28.8-134	D	%Rec	1	10/5/2016 6:47:47 PM	27882
Surr: 2-Fluorobiphenyl	47.4	35.9-125	D	%Rec	1	10/5/2016 6:47:47 PM	27882
Surr: 4-Terphenyl-d14	47.4	15-146	D	%Rec	1	10/5/2016 6:47:47 PM	27882
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Toluene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Ethylbenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Methyl tert-butyl ether (MTBE)	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2,4-Trimethylbenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,3,5-Trimethylbenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2-Dichloroethane (EDC)	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2-Dibromoethane (EDB)	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Naphthalene	ND	20	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1-Methylnaphthalene	ND	40	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
2-Methylnaphthalene	ND	40	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Acetone	ND	100	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Bromobenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Bromodichloromethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Bromoform	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Bromomethane	ND	30	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
2-Butanone	ND	100	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Carbon disulfide	ND	100	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Carbon Tetrachloride	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Chlorobenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Chloroethane	ND	20	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Chloroform	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Chloromethane	ND	30	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
2-Chlorotoluene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
4-Chlorotoluene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
cis-1,2-DCE	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
cis-1,3-Dichloropropene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2-Dibromo-3-chloropropane	ND	20	D	µg/L	10	10/6/2016 2:37:28 PM	R37747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1610169

Date Reported: 10/12/2016

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Evaporation Pond

Project: WDW #2

Collection Date: 10/4/2016 2:05:00 PM

Lab ID: 1610169-001

Matrix: AQUEOUS

Received Date: 10/5/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
Dibromochloromethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Dibromomethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2-Dichlorobenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,3-Dichlorobenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,4-Dichlorobenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Dichlorodifluoromethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,1-Dichloroethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,1-Dichloroethene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2-Dichloropropane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,3-Dichloropropane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
2,2-Dichloropropane	ND	20	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,1-Dichloropropene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Hexachlorobutadiene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
2-Hexanone	ND	100	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Isopropylbenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
4-Isopropyltoluene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
4-Methyl-2-pentanone	ND	100	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Methylene Chloride	ND	30	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
n-Butylbenzene	ND	30	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
n-Propylbenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
sec-Butylbenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Styrene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
tert-Butylbenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,1,1,2-Tetrachloroethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,1,2,2-Tetrachloroethane	ND	20	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Tetrachloroethene (PCE)	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
trans-1,2-DCE	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
trans-1,3-Dichloropropene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2,3-Trichlorobenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2,4-Trichlorobenzene	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,1,1-Trichloroethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,1,2-Trichloroethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Trichloroethene (TCE)	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Trichlorofluoromethane	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
1,2,3-Trichloropropane	ND	20	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Vinyl chloride	ND	10	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Xylenes, Total	ND	15	D	µg/L	10	10/6/2016 2:37:28 PM	R37747
Surr: 1,2-Dichloroethane-d4	98.2	70-130	D	%Rec	10	10/6/2016 2:37:28 PM	R37747
Surr: 4-Bromofluorobenzene	99.7	70-130	D	%Rec	10	10/6/2016 2:37:28 PM	R37747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Analytical Report

Lab Order **1610169**

Date Reported: **10/12/2016**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Evaporation Pond

Project: WDW #2

Collection Date: 10/4/2016 2:05:00 PM

Lab ID: 1610169-001

Matrix: AQUEOUS

Received Date: 10/5/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
Surr: Dibromofluoromethane	108	70-130	D	%Rec	10	10/6/2016 2:37:28 PM	R37747
Surr: Toluene-d8	92.2	70-130	D	%Rec	10	10/6/2016 2:37:28 PM	R37747

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.00500	1	10/06/2016 23:48	WG914879

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		0.0500	1	10/10/2016 10:57	WG915704

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity	Non-Corrosive		1	10/07/2016 14:35	WG913957

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Flashpoint	DNF at 170 F		1	10/07/2016 16:49	WG914883



WG914879

Wet Chemistry by Method 9012 B

QUALITY CONTROL SUMMARY

L864149-01

ONE LAB. NATIONWIDE.



Method Blank (MB)

(MB) R3168794-2 10/06/16 21:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Reactive Cyanide	U	0.00180	0.00180	0.00500

L864149-01 Original Sample (OS) • Duplicate (DUP)

(OS) L864149-01 10/06/16 23:48 • (DUP) R3168794-5 10/06/16 23:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3168794-3 10/06/16 21:49 • (LCSD) R3168794-4 10/06/16 21:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Cyanide	0.100	0.0924	0.0991	92.0	99.0	85.0-115			7.00	20

2
Tc

3
Ss

4
Cn

5
Sr

5
Qc

7
Gl

8
Al

9
Sc

ACCOUNT:
Hall Environmental Analysis Laboratory

PROJECT:

SDG:
L864149

DATE/TIME:
10/10/16 14:49



Method Blank (MB)

(MB) R3169341-1 10/10/16 10:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Reactive Sulfide	U		0.00650	0.0500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3169341-2 10/10/16 10:52 • (LCSD) R3169341-3 10/10/16 10:52

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Sulfide	0.500	0.541	0.540	108	108	85.0-115			0.000	20

1
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



QUALITY CONTROL SUMMARY

L864149-01

WG913957

Wet Chemistry by Method 9040C

L863567-03 Original Sample (OS) • Duplicate (DUP)

(OS) L863567-03 10/07/16 14:35 • (DUP) WG913957-3 10/07/16 14:35

Analyte	Original Result	DUP Result	DUP RPD	DUP Qualifier	DUP RPD Limits
Corrosivity	Non-Corrosive	Non-Corrosive	0.000	%	10

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCS D)

(LCS) WG913957-1 10/07/16 14:35 • (LCS D) WG913957-2 10/07/16 14:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCSD Rec.	Rec. Limits	LCS Qualifier	LCS D Qualifier	RPD	RPD Limits
Corrosivity	6.11	6.16	6.16	%	%			%	%
				101	98.4-102			0.000	10

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

WG914883

Wet Chemistry by Method D93/1010A

QUALITY CONTROL SUMMARY

L864149-01

ONE LAB. NATIONWIDE.



L864207-02 Original Sample (OS) • Duplicate (DUP)

(OS) L864207-02 10/07/16 16:49 • (DUP) WG914883-3 10/07/16 16:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Flashpoint	deg F 159	deg F 157	1	% 1.27	% 20	% 20

L864207-04 Original Sample (OS) • Duplicate (DUP)

(OS) L864207-04 10/07/16 16:49 • (DUP) WG914883-4 10/07/16 16:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Flashpoint	deg F 70.9	deg F 70.9	1	% 0.000	% 20	% 20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) WG914883-1 10/07/16 16:49 • (LCSD) WG914883-2 10/07/16 16:49

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Flashpoint	deg F 82.0	deg F 82.9	deg F 82.9	% 101	% 101	% 96.0-104	% 0.000	% 0.000	% 7	% 7

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCOUNT:
Hall Environmental Analysis Laboratory

PROJECT:

SDG:
L864149

DATE/TIME:
10/10/16 14:49



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
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The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R37747		RunNo: 37747					
Prep Date:			Analysis Date: 10/6/2016		SeqNo: 1176309		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	113	70	130			
Toluene	19	1.0	20.00	0	93.7	70	130			
Chlorobenzene	18	1.0	20.00	0	89.4	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	92.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.8	70	130			
Surr: Toluene-d8	9.0		10.00		89.9	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R37747			RunNo: 37747					
Prep Date:		Analysis Date: 10/6/2016			SeqNo: 1176326		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R37747			RunNo: 37747					
Prep Date:	Analysis Date: 10/6/2016			SeqNo: 1176326		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R37747		RunNo: 37747							
Prep Date:	Analysis Date: 10/6/2016		SeqNo: 1176326		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	8.8		10.00		87.9	70	130			

Sample ID 1610169-001ams	SampType: MS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: North Evaporation	Batch ID: R37747		RunNo: 37747							
Prep Date:	Analysis Date: 10/6/2016		SeqNo: 1176350		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	240	10	200.0	0	122	70	130			D
Toluene	190	10	200.0	0	95.1	70	130			D
Chlorobenzene	180	10	200.0	0	92.3	70	130			D
1,1-Dichloroethene	230	10	200.0	0	114	70	130			D
Trichloroethene (TCE)	190	10	200.0	0	95.6	70	130			D
Surr: 1,2-Dichloroethane-d4	110		100.0		107	70	130			D
Surr: 4-Bromofluorobenzene	100		100.0		99.6	70	130			D
Surr: Dibromofluoromethane	100		100.0		104	70	130			D
Surr: Toluene-d8	92		100.0		91.7	70	130			D

Sample ID 1610169-001amsd	SampType: MSD		TestCode: EPA Method 8260B: VOLATILES							
Client ID: North Evaporation	Batch ID: R37747		RunNo: 37747							
Prep Date:	Analysis Date: 10/6/2016		SeqNo: 1176351		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	240	10	200.0	0	118	70	130	3.48	20	D
Toluene	180	10	200.0	0	90.5	70	130	4.92	20	D
Chlorobenzene	180	10	200.0	0	89.4	70	130	3.16	20	D
1,1-Dichloroethene	210	10	200.0	0	105	70	130	8.26	20	D
Trichloroethene (TCE)	180	10	200.0	0	91.9	70	130	3.87	20	D
Surr: 1,2-Dichloroethane-d4	95		100.0		94.6	70	130	0	0	D
Surr: 4-Bromofluorobenzene	99		100.0		99.2	70	130	0	0	D
Surr: Dibromofluoromethane	100		100.0		102	70	130	0	0	D
Surr: Toluene-d8	92		100.0		92.1	70	130	0	0	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	mb-27882		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 27882		RunNo: 37716					
Prep Date:	10/4/2016		Analysis Date: 10/5/2016		SeqNo: 1174799		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	mb-27882	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	27882	RunNo:	37716					
Prep Date:	10/4/2016	Analysis Date:	10/5/2016	SeqNo:	1174799	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		60.4	15	123			
Surr: Phenol-d5	88		200.0		44.0	4.13	124			
Surr: 2,4,6-Tribromophenol	170		200.0		84.8	18.4	134			
Surr: Nitrobenzene-d5	71		100.0		71.0	28.8	134			
Surr: 2-Fluorobiphenyl	58		100.0		57.8	35.9	125			
Surr: 4-Terphenyl-d14	80		100.0		80.1	15	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	Ics-27882		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSW		Batch ID: 27882			RunNo: 37716				
Prep Date:	10/4/2016		Analysis Date: 10/5/2016			SeqNo: 1174800		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	80	10	100.0	0	80.4	35	113			
4-Chloro-3-methylphenol	170	10	200.0	0	84.0	40.7	114			
2-Chlorophenol	160	10	200.0	0	79.3	37.6	113			
1,4-Dichlorobenzene	62	10	100.0	0	61.6	37.7	106			
2,4-Dinitrotoluene	77	10	100.0	0	76.8	37	91			
N-Nitrosodi-n-propylamine	86	10	100.0	0	86.3	45.4	105			
4-Nitrophenol	120	10	200.0	0	59.1	33.4	104			
Pentachlorophenol	120	20	200.0	0	60.8	29.5	94.9			
Phenol	130	10	200.0	0	63.0	30.6	119			
Pyrene	83	10	100.0	0	83.5	26.2	120			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.0	39.9	125			
Surr: 2-Fluorophenol	140		200.0		70.0	15	123			
Surr: Phenol-d5	110		200.0		57.4	4.13	124			
Surr: 2,4,6-Tribromophenol	140		200.0		69.3	18.4	134			
Surr: Nitrobenzene-d5	74		100.0		74.0	28.8	134			
Surr: 2-Fluorobiphenyl	66		100.0		66.4	35.9	125			
Surr: 4-Terphenyl-d14	74		100.0		73.7	15	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	MB-27929		SampType: MBLK		TestCode: EPA Method 7470: Mercury					
Client ID:	PBW		Batch ID: 27929		RunNo: 37782					
Prep Date:	10/6/2016		Analysis Date: 10/7/2016		SeqNo: 1176944		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.00020								

Sample ID	LCS-27929		SampType: LCS		TestCode: EPA Method 7470: Mercury					
Client ID:	LCSW		Batch ID: 27929		RunNo: 37782					
Prep Date:	10/6/2016		Analysis Date: 10/7/2016		SeqNo: 1176945		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	80	120			

Sample ID	1610169-001CMS		SampType: MS		TestCode: EPA Method 7470: Mercury					
Client ID:	North Evaporation		Batch ID: 27929		RunNo: 37782					
Prep Date:	10/6/2016		Analysis Date: 10/7/2016		SeqNo: 1176947		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0056	0.00020	0.005000	0.0003584	105	75	125			

Sample ID	1610169-001CMSD			SampType:	MSD		TestCode:	EPA Method 7470: Mercury			
Client ID:	North Evaporation		Batch ID:	27929		RunNo:	37782				
Prep Date:	10/6/2016		Analysis Date:	10/7/2016		SeqNo:	1176948		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0054	0.00020	0.005000	0.0003584	101	75	125	3.44	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	MB-27930		SampType:	MBLK		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	PBW		Batch ID:	27930		RunNo:	37793			
Prep Date:	10/6/2016		Analysis Date:	10/7/2016		SeqNo:	1177218		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-27930		SampType:	LCS		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	LCSW		Batch ID:	27930		RunNo:	37793			
Prep Date:	10/6/2016		Analysis Date:	10/7/2016		SeqNo:	1177219		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.49	0.020	0.5000	0	97.9	80	120			
Barium	0.47	0.020	0.5000	0	94.2	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.1	80	120			
Chromium	0.47	0.0060	0.5000	0	93.9	80	120			
Lead	0.46	0.0050	0.5000	0	92.6	80	120			
Selenium	0.48	0.050	0.5000	0	96.5	80	120			
Silver	0.097	0.0050	0.1000	0	96.9	80	120			

Sample ID	1610169-001CMS		SampType:	MS		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	North Evaporation		Batch ID:	27930		RunNo:	37793			
Prep Date:	10/6/2016		Analysis Date:	10/7/2016		SeqNo:	1177226		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.55	0.020	0.5000	0.02658	105	75	125			
Cadmium	0.48	0.0020	0.5000	0	96.3	75	125			
Chromium	0.47	0.0060	0.5000	0	94.7	75	125			
Lead	0.46	0.0050	0.5000	0	91.5	75	125			
Selenium	0.45	0.050	0.5000	0	89.4	75	125			
Silver	0.10	0.0050	0.1000	0	102	75	125			

Sample ID	1610169-001CMSD		SampType:	MSD		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	North Evaporation		Batch ID:	27930		RunNo:	37793			
Prep Date:	10/6/2016		Analysis Date:	10/7/2016		SeqNo:	1177227		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.55	0.020	0.5000	0.02658	105	75	125	0.276	20	
Cadmium	0.48	0.0020	0.5000	0	96.1	75	125	0.223	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1610169

12-Oct-16

Client: Western Refining Southwest, Inc.

Project: WDW #2

Sample ID	1610169-001CMSD	SampType:	MSD	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	North Evaporation	Batch ID:	27930	RunNo:	37793					
Prep Date:	10/6/2016	Analysis Date:	10/7/2016	SeqNo:	1177227	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.47	0.0060	0.5000	0	94.7	75	125	0.0106	20	
Lead	0.46	0.0050	0.5000	0	91.2	75	125	0.317	20	
Selenium	0.45	0.050	0.5000	0	89.6	75	125	0.246	20	
Silver	0.10	0.0050	0.1000	0	102	75	125	0.274	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1610169

RcptNo: 1

Received by/date: Ln 10/05/16

Logged By: **Anne Thorne** 10/5/2016 7:15:00 AM

Completed By: **Anne Thorne** 10/5/2016

Reviewed By:

Anne Hume

Anne Hume

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

- | | | | |
|---|---|--|---------------------------------------|
| 4. Was an attempt made to cool the samples? | Yes ☒ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☒ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☒ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☒ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☒ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☒ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☒ | No ☐ | No VOA Vials ☐ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☒ | |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes ☒ | No ☐ | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☒ | No ☐ | |
| 14. Is it clear what analyses were requested? | Yes ☒ | No ☐ | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization.) | Yes ☒ | No ☐ | |
- # of preserved bottles checked for pH: 2

Adjusted? ☒

Checked by: _____

of preserved bottles checked for pH: 1 AT
2 7
(<2 or >12 unless noted)
Adjusted?

Checked by: AT 10/05/16

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			

